

DETAILED ACTION

This action is responsive to the Amendments/Arguments filed 9/29/2009. Claims 1, 12, and 23-32 have been amended. Claims 1-33 are still pending.

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 33 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim is directed to non-statutory subject matter, namely a computer program. Claim 33 was rejected in the previous office action. Applicant stated in the Remarks that claim 33 was amended to overcome the 101 rejection; however the claim has not been amended to comply with 101.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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3. Claims 1-4, 6-9, 12-15, 17-20, 23-26, and 28-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Li et al. (US 7266407).

4. Addressing claims 1, 12 and 23, Li discloses an apparatus for and method of generating a three-dimensional radar image of the interior of a body part, the image having multiple image points and the method comprising (see abstract): receiving radiation information obtained at an array of scan locations relative to the body part, the radiation information being obtained at multiple microwave frequencies at each of the scan locations (see col. 2 lines 58-63, col. 3 lines 26-67, and col. 4 lines 1-13); receiving exterior three-dimensional geometric surface profile information relating to the body part (see col. 2 lines 58-63, col. 3 lines 26-67, and col. 4 lines 1-13); receiving estimates of body part properties (see col. 2 lines 58-63, col. 3 lines 26-67, and col. 4 lines 1-13); constructing each image point by synthetically focusing the radiation information by: determining the minimum optical paths between each scan location and the image point based on the scan locations, exterior three-dimensional geometric surface profile information and body part properties; phase-shifting the radiation information based on the minimum optical paths to equalize the radiation information; and then summing the equalized radiation information over all scan locations and all frequencies to provide a value for the image point (see fig. 3 and col. 2 lines 17-30, col. 2 lines 58-63, col. 3 lines 3-67, col. 4 lines 1-13, col. 9 lines 12-26, and col. 10 lines 6-35); and; generating the 3D radar image of the interior of the body part based on the values of each of the image points (see col. 2 lines 58-63, col. 3 lines 26-67, and col. 4 lines 1-13).

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5. Addressing claims 2-4, 6-7, 13-15, 17-18, 24-26, and 28-29, Li discloses wherein the body part properties comprise: estimates of the thickness and dielectric constant of dielectric interfaces of the body part between the scan locations and the image point; and estimates of the dielectric constant of the body part in the vicinity of the image point (see col. 5 line 47-col. 6 line 4 and col. 6 lines 35-53), wherein the body part properties comprise: estimates of the thickness and dielectric constant of the skin dielectric interface; and the dielectric constant of the body part in the vicinity of the image point and the body part is a human breast and the body part properties comprise: estimates of the thickness and dielectric constant of the skin dielectric interface of the breast; and the dielectric constant of the breast tissue (see fig. 1 and col. 5 line 47-col. 6 line 4 and col. 6 lines 35-53), wherein the values of the image points are radar intensity values (see fig. 3 and col. 2 lines 17-30, col. 2 lines 58-63, col. 3 lines 3-67, and col. 4 lines 1-13), displaying the three-dimensional radar image of the body part (see col. 2 lines 58-63, col. 3 lines 26-67, and col. 4 lines 1-13).

6. Addressing claims 8-9, 19-20, and 30-31, Li discloses wherein the radiation information is obtained at each scan location at multiple discrete frequencies of at least 10 GHz, wherein the radiation information is obtained at multiple discrete frequencies in the frequency range of approximately 10 GHz-18 GHz (see col. 5 lines 45-60).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 5, 16, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (US 7266407), in view of Johnson et al. (US 2006/0084859).

10. Addressing claims 5, 16, and 27, Li, as above, discloses mapping the valid optical paths between each scan location and the image point and selecting the minimum optical path from the valid optical paths (see col. 9 lines 12-26 and col. 10 lines 6-35), but does not explicitly disclose using Snell's law of refraction. However, Johnson discloses a microwave imaging system that uses a transmission wave field imaging method and uses Snell's law to calculate transmission and optical paths through tissue (see paras 170-172 and 268-270). Therefore, it would have been

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obvious to one of ordinary skill in the art at the time of invention to incorporate using Snell's law of refraction to accurately describe paths in tissue.

11. Claims 10-11, 21-22, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li et al. (US 7266407).

12. Addressing claims 10-11, 21-22, and 32-33, Li discloses obtaining multiple discrete frequencies and different locations relative to the body part. Therefore, it would have been obvious to and within the skill of one of ordinary skill in the art at the time of invention to use multiple frequencies and different scan locations relative to the body part, including those set forth in the claims, to optimize the procedure and apparatus in view of Li's disclosure.

Response to Arguments

13. Applicant's arguments with respect to claims 1-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NIGEL FONTENOT whose telephone number is (571)270-7032. The examiner can normally be reached on Monday-Friday (7:00a-4:00p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/N. F./

Examiner, Art Unit 3768

/Long V Le/

Supervisory Patent Examiner, Art Unit 3768